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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/561,578      | 12/19/2005  | Martin Kadner        | DE03 0187 US        | 9850             |

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| EXAMINER |
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DEB, ANJAN K

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2858

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 04/25/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|-------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/561,578 | Applicant(s)<br>KADNER, MARTIN |  |
|                              | Examiner<br>Anjan K. Deb      | Art Unit<br>2858               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show suitable descriptive legend for the blocks 12, 16, 18, 14 in the Figure as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities:

Specification does not conform to US Patent preferred layout for the specification of a utility application. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

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In the specification, page 1, first line after Title, insert:

“CROSS REFERENCE TO RELATED APPLICATIONS

This application is a 371 of International Patent Application Number PCT/IB04/50705, filed May 14, 2004.”

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Besson (US 5,218,289 A).

Re claims 1, 4, 6-9, Besson discloses phase detector (phase-shift measurement)(column 1 line 24,25) and method of phase detection of electrical signal comprising at least one differential signal of two input signals (S1,S2) may be formed over at least one predefined period by means of a first subtracter (40,50) at least one maximum value of the at least one differential signal may be detected by means of a first peak detector (43,53) (peak voltage)(column 4 line 35) and at least one minimum value of the at least one differential signal may be detected by means of a second peak detector (44,54) and at least one further differential signal may be formed from the at least one maximum value and the at least one minimum value by means of a second subtracter (COMPUTER performs subtraction  $\phi 2 - \phi 1$ ) (column 6 line 25)(Fig. 5).

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Besson (US 5,218,289 A) in view of Wilcox (US 3,824,494 A).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Re claim 2, Besson disclosed all of the claimed limitations as set forth above except phase detector is monolithically integrated.

Wilcox disclosed phase detector 14 (Fig. 1) capable of being fabricated in monolithically integrated circuit form (column 4 line 1).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Besson by fabricating phase detector in monolithically integrated circuit form disclosed by Wilcox in order to enhance reliability, cost and manufacturability.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Besson (US 5,218,289 A) in view of Lindholm (US 5,487,084 A).

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Re claim 3, Besson disclosed all of the claimed limitations as set forth above except phase detector is integrated into smart card.

Lindholm disclosed phase detector is integrated into smart card for controlling oscillator VCO (column 5 lines 11-20)(Fig. 1).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Besson by integrating phase detector into smart card disclosed by Lindholm for controlling oscillator VCO.

8. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Besson (US 5,218,289 A) in view of Schweickert (US 4,638,248 A).

Re claims 5 and 10, Besson disclosed all of the claimed limitations as set forth above except at least one of the signals to be processed may substantially be described by a Fourier series.

Schweickert disclosed phase detection apparatus and method wherein at least one of the signals to be processed is described by a Fourier series to resolve the signals into their spectral components so that non-sinusoidal periodic waveforms can be measured with no loss in accuracy (column 2 lines 49-54).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Besson by describing at least one of the signals to be processed by Fourier series disclosed by Schweickert to resolve the signals into their spectral components to measure non-sinusoidal periodic waveforms without loss in accuracy.

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***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yanagisawa (US 6,528,982 B1) discloses phase difference detector for detecting the phase difference between two input signals 101,102 (Fig. 11).

Eisenhauer (US 5,184,063 A) discloses phase detection system comprising differential signals.

Gilbert (US 6,822,433 B1) discloses phase detector circuit preferably implemented as fully differential signals as is typical with integrated circuits (Fig. 6).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached at (571) 272-2168.



**Anjan K. Deb, P.E, Ph.D.**

Primary Patent Examiner

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4/18/07

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